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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,967	05/28/1999	RICHARD L. FRANK	ORA99-09(OID)	7319
21005	7590	12/04/2003	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			ZHEN, LI B	
			ART UNIT	PAPER NUMBER
			2126	15

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/321,967

Applicant(s)

FRANK ET AL.

Examiner

Li B. Zhen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected:
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 3, 5 – 10, 12 – 15, 17, 18, 21 – 26, 28 – 35, 37 – 41, 44 – 47, 49 – 54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,192,401 to Modiri in view of U.S. Patent No. 6,279,032 to Short.

As to claim 12, Modiri teaches [column 2, lines 20 – 45] a figure of merit [weighting value to each node] indicating a value for a member node to continue operation [base cluster membership upon weighting factor... by favoring most valued nodes]. As to querying an application program, Modiri teaches that the method of determining a figure of merit may be implemented in software [column 2, lines 60 – 62]. Modiri teaches that the cluster management software [software layer 250] and an application program [software modules in layer 220] determine a node's value [the software modules in layers 220 and 250 are responsible for determining the membership in the cluster; column 6, lines 30 – 35] and the cluster framework 220 includes modules such as the Cluster membership and quorum and reconfiguration 224 that provides reconfiguration decision making [column 4, lines 50 – 67]. Modiri teach querying an application program but does not specify a user application program.

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However, Short teaches quorum resource arbitration [col. 2, lines 39 – 65], determining which member set of a partitioned cluster should survive to represent the cluster [col. 2, lines 28 – 45], and querying an user application program [determines which system should take ownership of which groups based on system capabilities, current load, and application feedback; col. 9, lines 1 – 23].

It would have been obvious to a person of ordinarily skilled in the art at the time of the invention to apply the teaching of querying a user application program [application feedback] as taught by Short to the invention of Modiri because this allows the application to provide application state information to the failover manager to make decisions about groups [col. 6, lines 52 – 65 of Short].

As to claims 1 and 13, Modiri teaches [column 2, lines 20 – 45] a management program [cluster management software, software layer 250, Fig. 2], an application program [software modules in layer 220, Fig. 2; column 6, lines 30 – 35] determining a figure of merit [the software modules in layers 220 and 250 are responsible for determining the membership in the cluster; column 6, lines 30 – 35] indicating a value for a member node to continue operation [base cluster membership upon weighting factor...by favoring most valued nodes]. As to querying a user application program, see the rejection to claim 12 above.

As to claim 7, this is the same as claim 1 with the addition of evaluating node figure of merit to determine partition figure of merit, selecting a cluster partition to operate as network cluster in response to partition figure of merit, and halting the operation of the remaining cluster partitions. Modiri teaches [column 8, lines 43 – 61]

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evaluating node figure of merit [computer nodes 310A and 310B have weighting values of ten and three, Fig. 3A] to determine partition [subset 330A, Fig. 3A] figure of merit [subset 330A computer nodes 310A and 310B have weighting values of ten and three...from straight addition of the weighting values of the subsets, subset 330A has a configuration values of thirteen, Fig. 3A]. Modiri teaches determining partition figure of merit [column 8, lines 48 – 61] and selecting the partition based on the partition figure of merit [if the maximum configuration value is the selection criterion, then subset 330A will become the reconfigured cluster. Modiri as modified teaches halting the operation [take the resource offline] of the remaining cluster partitions [if a resource fails, the resource manager 86 may choose to restart the resource, or to take the resource offline along with any resources dependent thereon; col. 8, lines 57 – 67 of Short].

As to claim 24, this is a combination of claims 1 and 22; see the rejections to claims 1 and 22 above.

As to claim 32, this is a combination of claims 7 and 22; see the rejections to claims 7 and 22 above.

As to claim 40, this is a combination of claims 12 and 22; see the rejections to claims 12 and 22 above.

As to claim 41, this is a system claim that corresponds to method claim 24; see the rejection to claim 24 above, which also meets this system claim.

As to claim 44, this is a system claim that corresponds to product claim 12; see the rejection to claim 12 above, which also meets this system claim.

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As to claim 51, this is a combination of claims 44 and 50; see the rejections to claims 44 and 50 above.

As to claims 2, 14, 25, 46 and 53, Modiri teaches [column 2, lines 40 – 46] assessing merit criteria for the member node to determine figure of merit [weighting value may be based upon various factors].

As to claims 3, 10, 15, 26, 35, 47 and 54, Modiri as modified teaches the figure of merit may be based upon various factors such as relative processing power of the node [column 2, lines 40 – 46 of Modiri], and determining the number of users [current load] executing from the node [determines which system should take ownership of which groups based on system capabilities, current load; col. 9, lines 1 – 23 of Short].

As to claims 5, 8, 17, 28 and 33, Modiri teaches [column 6, lines 45 – 50] a proposed figure of merit [static weight is set by configuration].

As to claims 6, 9, 18, 29, 34 and 37, Modiri teaches [column 6, lines 45 – 60; column 8, lines 47 – 61] selecting between the proposed figure of merit [static weight] and an alternate figure of merit [dynamic weight].

As to claims 21, 30, 38, 49 and 56, Modiri as modified teaches determining by the management program [resource manager 86 and failover manager 88 components] whether there is a user application program [resource] executing on the member node to query [resource manager 86 and failover manager 88 components receive resource and system state information from at least one resource monitor 90 and the node manager 72, for example, to make decisions about groups; col. 6, lines 50 – 67 of Short].

As to claims 22 and 50, Modiri as modified teaches querying a plurality of user application programs at a member node [event processor 92 propagates events to and from applications and to and from the components within the cluster service 70; col. 6, line 63 – col. 7, line 7 of Short].

As to claims 23, 31 and 39, Modiri as modified teaches voting by the user application program on the value of the member node to continue operation in the partitioned network cluster [resource manager 86 and failover manager 88 components receive resource and system state information from at least one resource monitor 90 and the node manager 72, for example, to make decisions about groups; col. 6, lines 50 – 67 of Short].

As to claims 45 and 52, see the rejection to claim 1.

3. Claims 4, 11, 16, 19, 20, 27, 36, 42, 43, 48 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modiri and Short in view of U.S. Patent No. 5,915,095 to Miskowiec.

As to claims 4, 11, 16, 27, 36, 48 and 55, Modiri as modified teaches [column 2, lines 40 – 46 of Modiri] the figure of merit may be based upon various factors such as relative processing power of the node, amount of physical memory, etc. Modiri as modified does not disclose measuring execution priority of an application.

However, Miskowiec teaches measuring application priority [“application priority” is an indicator associated with one or more applications and is indicative of a ranking of preferred applications; col. 7, lines 1 – 20].

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It would have been obvious to a person of ordinary skill in the art to apply the teaching of measuring application priority as taught by Miskowiec to the invention of Modiri because using application priority to determine the importance of a partition to continue operating would insure that applications with high priority would continue processing.

As to claim 19, this is a combination of claims 1 – 6; see the rejections to claims 1 – 6 above.

As to claim 20, this is a combination of method claims 7 – 11; see the rejections to claims 7 – 11 above.

As to claim 42, this is a combination of claims 19 and 22; see the rejections to claims 19 and 22 above.

As to claim 43, this is a combination of claims 20 and 22; see the rejections to claims 20 and 22 above.

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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (703) 305-3406. The examiner can normally be reached on Mon - Fri, 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Li B. Zhen
Examiner
Art Unit 2126

lbz
November 28, 2003



JOHN FOLLANSBEE
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